

REMARKS

Formal Drawings:

Applicant thanks the Examiner for indicating that the informal drawings are acceptable for examination purposes. Applicant herewith submits 7 sheets of Formal Drawings, and hereby requests the Examiner acknowledge and approve these drawings.

Information Disclosure Statements:

Applicant thanks the Examiner for initialing and returning the Form PTO-1449s filed on February 4, 2002, and indicating that all of the references listed thereon have been considered.

Specification/Abstract:

The Examiner has objected to the Abstract of the specification under 37 C.F.R. § 1.72, requiring the Abstract be less than 150 words. Applicant respectfully submits herewith an amended Abstract as shown in the attached Appendix. Applicant hereby requests the Examiner reconsider and withdraw the above objection to the Abstract.

Claim Rejections:

Claims 1-41 are all the claims pending in the application, and currently all of the claims stand rejected.

35 U.S.C. § 102(b) Rejection - Claims 1-10, 13-14, 29-37, and 40-41:

Claims 1-10, 13-14, 29-37 and 40-41 stand rejected under 35 U.S.C. § 102(b) as being anticipated U.S. Patent No. 5,911,023 to Risch et al. Applicant respectfully disagrees.

As an initial matter, Applicant notes that claims 1 and 29 have been amended as shown in the attached Appendix, where the limitations of claims 11 and 38 have been incorporated into their respective independent claims. Applicant thus submits that these claims are merely original

claims 11 and 38 written in independent form, and are not intended to narrow the scope or spirit of these original claims.

Turning now to the '023 patent, Applicant notes that the '023 Patent teaches and discloses the means and methods to decrease "gel-swellability" of various optical cable components. As shown in col. 8 (lines 21-34) and Figure 5, this reference promotes the use of higher Melt Flow Index (MFI) materials in an effort to reduce the amount of swelling in cable materials.

Specifically, the '023 patent discloses a cable **10** having a gel-filled buffer tube **12** made from a polyolefin material having a high MFI, where there are a plurality of fibers **14** in the tube **12**. There is also an outer jacket **24**. *See* Figure 6 and col. 10, lines 5-15. However, there is no disclosure, teaching or suggestion of having a gel-swellable layer or portion which "swells more than 10% at 85°C" as recited in claims 1, 15 and 29. In fact, the '023 patent expressly teaches reducing the amount of gel-swellability as much as possible.

Therefore, for at least the reasons stated above, Applicant respectfully submits that the '023 patent fails to disclose each and every feature of the claimed invention as set forth in claims 1 and 29, and hereby requests the Examiner reconsider and withdraw the 35 U.S.C. § 102(b) rejection of these claims. Further, as claims 2-10, 13-14, 30-37 and 40-41 depend on these claims respectively, Applicant submits that these claims are also allowable, at least by reason of their dependency.

35 U.S.C. § 102(e) Rejection - Claims 1, 11-12, 29, and 38-39:

Claims 1, 11-12, 29 and 38-39 stand rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,085,009 to Risch et al. Again, Applicant disagrees.

As an initial matter, Applicant notes that the rejection of the above claims in view of the '009 patent is more properly under the provisions of 35 U.S.C. § 102(a) and not 35 U.S.C. § 102(e) as the issue date of the '009 patent is prior to the filing date of the present application.

The Examiner asserts that Figure 3 of the '009 patent discloses that the gel-swellable material tested swells more than 10% at 85°C. Applicant respectfully disagrees with this characterization of the teachings and disclosure of the '009 patent. Much like the '023 patent discussed above, the '009 patent is directed to reducing the amount of swelling by components of an optical cable. In Figure 3 of the '009 patent, the maximum swelling reached at 85°C is about 2.5% for the sample "i-PP#2". *See* Figure 3. Therefore, Applicant submits that there is no disclosure of any kind of having a swellable material which swells more than 10% at 85°C. In fact the '009 patent clearly states that "[i]t is another object of the present invention to provide a water blocking gel which does not cause excessive swelling" because of the adverse affects on the physical properties of prior art cables when swelling occurs. *See* '009 patent, col. 2, lines 5-12.

Therefore, as with the '023 patent, Applicant respectfully submits that the '009 patent fails to disclose each and every aspect of the claimed invention, as set forth in claims 1 and 29 and hereby requests the Examiner reconsider and withdraw the above 35 U.S.C. § 102(a)

rejection of these claims. Further, as claims 12 and 39 depend on these claims, respectively, Applicant submits that these claims are also allowable, at least by reason of their dependency.

35 U.S.C. § 103(a) Rejection - Claims 15-24 and 27-28:

Claims 15-24 and 27-28 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over the '023 patent in view of the level of skill in the art. Because claim 15 includes a similar limitation as claims 1 and 29 (because claim 25 has been incorporated into claim 15), Applicant respectfully submits that the arguments to address the above 35 U.S.C. § 102(b) rejection under the '023 patent equally apply to the 35 U.S.C. § 103(a) rejection of the above claims. Further, because the level of ordinary skill in the art does not cure the deficient teachings of the '023 patent, Applicant respectfully submits that the above claims are also allowable, for at least the same reasons set forth previously.

35 U.S.C. § 103(a) Rejection - Claims 15, and 25-26:

Claims 15 and 25-26 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over the '009 patent in view of the level of ordinary skill in the art. Again, because claim 15 includes a similar limitation as claims 1 and 29, Applicant respectfully submits that the arguments to address the above 35 U.S.C. § 102(a) rejection under the '009 patent equally apply to the 35 U.S.C. § 103(a) rejection of the above claims. Further, because the level of ordinary skill in the art does not cure the deficient teachings of the '009 patent, Applicant respectfully submits that the above claims are also allowable, for at least the same reasons set forth previously.

Conclusion:

AMENDMENT UNDER 37 C.F.R. § 1.111
U.S. Application No. 09/851,247

Our Ref.: A7966
Art Unit: 2874

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



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Date: July 22, 2002

APPENDIX
VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS:

Claims 11, 25, and 38 are canceled without prejudice or disclaimer.

The claims are amended as follows:

1. (Amended) A fiber optic cable, comprising:

an outer layer;

at least one optical fiber disposed inside said outer layer; and

a gel-swellable portion and water resistant gel positioned adjacent to each other and

disposed between said outer layer and said optical fiber;

wherein said gel-swellable portion absorbs at least some of said gel, and wherein said
gel-swellable portion swells more than 10% at 85°C.

15. (Amended) A fiber optic cable, comprising:

an outer layer;

at least one optical fiber ribbon disposed inside said outer layer; and

a gel-swellable layer and a water resistant gel positioned adjacent to each other and

disposed between said outer layer and said ribbon;

wherein said gel swellable layer absorbs at least some of a said gel, and wherein said gel-
swellable layer swells more than 10% at 85°C.

29. (Amended) A fiber optic cable, comprising:

an outer layer, having at least one gel-swellable portion adhered to an inside surface of said outer layer;

at least one optical fiber; and

a water resistant gel disposed between said at least one optical fiber and said outer layer;

wherein said gel-swellable portion absorbs at least some of said gel, and wherein said gel-swellable portion swells more than 10% at 85°C.

IN THE ABSTRACT OF DISCLOSURE:

The abstract is changed as follows:

The present invention adds a gel-swellable layer in fiber optic cables to aid in protecting the fibers within the cable. The gel-swellable layer can be placed on the fibers, individual ribbons, stacks of ribbons and on the inner surface of tubes by various methods, such as co-extrusion, and can be cured by either heat curing or UV curing. The gel-swellable layers of this invention can be either smooth or textured. When the fibers are placed into the tubes and the tubes are filled with the water resistant gel, the gel-swellable layer absorbs some of the gel causing it to "swell". As a result of the "swelling" a certain volume of gel is absorbed by the layer, thus reducing the capability of the gel to flow at elevated temperatures. ~~Additionally, the swelled layers create a desirable stiffness transition from harder (less swelled) particles at the surface of the fiber to softer (more swelled) particles on the surface of the swelled layer. This variable stiffness swelled layer then acts as a bumper and positioning structure between the fibers and the buffer tube or outer jacket, keeping the fibers in the center of the tube, and~~

~~preventing the outer fibers from contacting the tube when the gel begins to break down at higher temperatures. Further, the swelling action results in the absorption of the lower viscosity components of the gel, thereby reducing the likelihood of oil separation in the gel, which leads to gel breakdown. In addition, gel swellable layers serve as lubricating layers allowing individual fibers in the fiber bundle and ribbons in the ribbon stacks to slide with respect to each other under applied thermo-mechanical loads thus reducing contact stress and associated fiber bending and buckling and attenuation problems.~~